

Common antimicrobial inhibits immune cell function

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(Medical Xpress) -- Triclosan, a common antibacterial agent found in many hand soaps and other products, is known to have the added benefit of alleviating allergic skin conditions such as eczema. In a study recently published in the journal *Toxicology and Applied Pharmacology*, University of Maine researchers Julie Gosse and Rachel Palmer find that this anti-inflammatory effect may be caused by triclosan's inhibitory effect on mast cells, which are implicated in allergies and asthma but which also are key components of a healthy immune system.

Mast cells are a type of immune cell found in most bodily tissues. In response to the presence of allergens, [mast cells](#) release histamines and other substances into body tissues. The process is known as degranulation and it is responsible for inflammation, swelling, redness and pain. But degranulation also triggers the healthy deployment of white blood cells and supports the innate immune response that helps prevent infection and tumor growth.

Triclosan, effective at a 1% concentration against a broad swath of disease-causing microorganisms, was first introduced in the 1970s as an effective agent in surgical scrub solutions, says Gosse, an assistant professor of biochemistry in the Department of Molecular and Biomedical Sciences. Now, however, it is widespread in consumer products.

"Today, TCS [triclosan] is found in hundreds of medical, consumer and personal care products (e.g. toys, bedding, deodorant, cosmetics, soap and toothpaste) at concentrations up to 0.3 % or 10mM," Gosse writes. Triclosan is readily absorbed into the skin.

Testing rat mast cells with triclosan at much lower concentrations than those found in household products, Gosse's study found that triclosan strongly inhibits degranulation and other mast cell

functions, possibly accounting for its therapeutic effect in treating [eczema](#) and other allergic skin disorders.

Her findings support clinical evidence that triclosan could be an effective targeted treatment for such conditions.

But Gosse calls for further investigation into the unintended effects of triclosan's widespread availability in consumer products, including recent separate reports that triclosan may function as an endocrine disrupter. Additionally, other immune cell types that are biochemically similar to mast cells could potentially be adversely affected by triclosan.

Provided by University of Maine

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